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Scafe, Marla Gail Chadwick

**AN INVESTIGATION OF THE RELATIONSHIP OF TEACHER
EFFECTIVENESS AND TEACHER AND STUDENT SOCIAL STYLES**

The University of Oklahoma

PH.D. 1981

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

AN INVESTIGATION OF THE RELATIONSHIP OF TEACHER EFFECTIVENESS
AND TEACHER AND STUDENT SOCIAL STYLES

SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF PHILOSOPHY

BY
MARLA GAIL CHADWICK SCAFE

Norman, Oklahoma

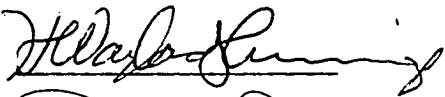
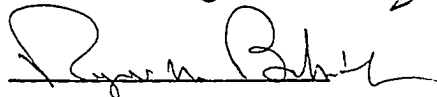
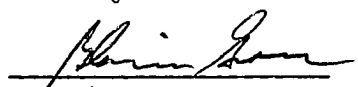

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MARLA GAIL CHADWICK SCAFE
Norman, Oklahoma
1981

APPROVED BY

**An Investigation of the Relationship of Teacher Effectiveness
and Teacher and Student Social Styles**

By: Marla Gail Chadwick Scafe

Major Professor: H. Wayland Cummings, Ph.D.

This study investigated the relationship between students' perceptions of their teacher's effectiveness and teachers' and students' social styles. Social style was measured by the use of the Social Style Profile Instrument (Buchholz, Lashbrook, and Wenburg, 1976). Teacher effectiveness was measured by a 21-item factor-analyzed unidimensional scale obtained from items taken from the Purdue Rating Scale and the Idea Form.

Teachers' and students' social styles responses were classified into one of four social styles: analytic, amiable, driver, or expressive. Results showed that teacher effectiveness was significantly related to teachers' and students' social styles, but the amount of variance accounted for between teacher effectiveness and social styles, r^2 , was not meaningful. Results of an independent measures t-test showed that students who were similar (homophilous) to their teacher's social style rated their teacher significantly more effective than students who were dissimilar (heterophilous) to their teachers' social style. A 2x2x2 way factorial analysis of variance (high and low responsiveness, assertiveness, and versatility) showed non-significant results for all except the main effect versatility and the interaction effect for assertiveness and responsiveness.

Further research needs to be conducted using quartiles instead of medians to calculate an individual's social style.

ACKNOWLEDGEMENTS

The culmination of this project would not be possible without the help of several individuals. While it is not possible to thank personally everyone who had an impact on my education and dissertation, some individuals deserve special recognition.

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Third, I would like to thank all the teachers who agreed to participate in this research. While it is not possible to mention each and every teacher here, I would like these individuals from Cental State University, School of Business and the University of Oklahoma, Department of Communication to know how much I appreciated their participation and support.

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First, I would like to thank my dear friend, Mary Cusack for giving me an opportunity to "blow off steam" and bounce

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INTRODUCTION

What determines whether or not a teacher is effective? On what basis does a person judge teacher effectiveness? These questions continue to frustrate researchers and educators because no one definitive answer is provided. As a result, many theories exist about teacher effectiveness, with little empirical data leading to support one theory over another.

If teacher effectiveness research is so inconclusive, why pursue it? A possible reason is that teacher effectiveness is rarely viewed from a communication standpoint. Also, communication researchers can offer a different perspective on the teacher effectiveness issue which may help to solve problems encountered in teacher effectiveness research. An application of communication principles to the classroom will help to illustrate.

If one takes a source-receiver view of the classroom where the source is the teacher and the receivers are the students, then one is assuming linearity in communication with teacher as source initiating messages and students as receivers responding to the messages. Communication scholars claim that this view is limited, static, and inadequate in describing the real classroom process. Yet teacher effectiveness research, by its name alone, implies a major focus on the source (teacher) doing something to receivers (students) to get a desired response such as learning.

The above linear view is minimized in this study. Rather the assumption that guides this research effort is the belief that the student-teacher

relationship is interactive. The word "interactive" is used in this sense to mean an exchange of cognition, behaviors and affect from both teacher and student. Homans (1961) holds a similar belief for all social behavior. He believes that exchanges between individuals lay the bases for mutual reinforcement of each others cognitive and behavioral outputs (p. 35).

The second assumption that provides the major impetus for this study centers on the notion that each individual possesses a particular social style in every interaction. These social styles are behavioral patterns of expressing one's self. In the teacher-student relationship, social style becomes particularly important because students and teachers communicate with each other through stylized patterns. Furthermore, the ability of the teacher who utilizes a particular social style to communicate with the students (each one of whom has a particular social style) affects what is traditionally termed "teacher effectiveness". This is the central question under investigation. Is teacher effectiveness enhanced when the teacher and student utilize the same social style when communicating?

Conceptual support for the importance of similarity of social style comes from principles of homophily. Generally, the variables explored in homophily research include demography, personality, attitudes, values, beliefs, credibility, and attraction. Researchers define homophily as the degree to which two communicators perceive themselves as similar on these variables. The perceptions communicators have of each other affect communication outcomes in that the degree of similarity is said to determine the amount of willingness to communicate with the other person. A person is more willing to expose himself or herself to messages from another person perceived as more homophilous, an assertion having implications for the classroom. It may be that students show a

greater willingness to interact with teachers they perceive to be more homophilous. Research indicates that source-receiver homophily increases the likelihood of communication attempts and promotes communication effectiveness (Rogers and Bhowmik, 1970; Rogers and Shoemaker, 1971). Therefore, students having social styles similar to their teachers should perceive their teacher as more effective than students having dissimilar social styles. The purpose of this study is to test this assertion.

An homophilous relationship may not be dependent upon total similarity between teacher and student social styles. There is reason to believe that some dissimilarities enhance communication effectiveness more than total similarity. The research of Simons, Berkowitz, and Moyer (1970), Alpert and Anderson (1972), and King and Sereno (1973) provide support for this notion. Their research findings indicate that the principle of homophily should be modified to account for certain moderate dissimilarities between generally homophilous communicators that appear to enhance the effectiveness of the communication to an even greater degree. Specific support comes from Alpert and Anderson (1972) who illustrate that maximally effective communication occurs when the source is perceived as neither highly homophilous nor highly heterophilous, but what Rogers and Shoemaker (1971) term as "optimal heterophily". Simons et al., (1970, p. 16) state: "Contrary to prevalent formulations it appears that certain dissimilarities have positive effects on attitude change." The optimal heterophilous relationship between teacher and student may be helpful in explaining the relationship between teacher effectiveness when assessing heterophily in terms of student social style.

The use of the social style construct (Buchholz, Lashbrook, and Wenburg, 1976) in classroom research is relatively untapped. The social style construct was used mainly in organizational settings. Only one study (Knutson, 1979)

investigated social style in a classroom setting. However, Knutson's study focused more on measurement and perceptual issues rather than on the relationship between social style and teacher effectiveness. Her major interest was determining whether or not discrepancies existed between students' perceptions of their teacher's social style and the teachers' perceptions of their own style. The study was also the first to illustrate the importance of social style as a variable in the classroom.

Organization

This study is organized in the following manner: relevant literature central to the problems outlined in this introduction is reviewed in Chapter One and Two. Chapter One presents information on teacher effectiveness and evaluation. Chapter Two presents social style research; the development of the construct, its dimensions, and four resultant styles; reliability and validity of the Social Style Profile used to measure social style and the potential relationship of styles to teacher effectiveness. Chapter Three relates the literature in Chapters One and Two to the questions that guided this study. Ways of testing the hypotheses generated from the research questions are included. Chapter Four describes the results, and Chapter Five interprets the results and outlines implications for communication study.

CHAPTER I

LITERATURE REVIEW OF TEACHER EFFECTIVENESS

Ever since the early 1920's, teacher effectiveness research flourished. By the 1950's, an impressive number of studies accumulated. However, the quality of this research published between 1900 and 1952 was very poor. "No single, specific, observable teacher act has yet been found whose frequency or percent of occurrence is invariably and significantly correlated with student achievement." (Morsh and Wilder, 1954, p. 4).

Research efforts were rejuvenated in the 1950's with the formation of the AERA Committee on Criteria of Teacher Effectiveness (American Educational Research Association, 1952, 1953). Their work culminated in the publishing of the Handbook of Research on Teaching (Gage, 1963a). Teacher effectiveness research improved in the 1960's and 1970's to the point that a few researchers (Rosenshine and Furst, 1973; Dunkin and Biddle, 1974) compiled weak but consistent findings on teacher effectiveness variables. However, many apparent contradictory findings remain. One need only read Dunkin and Biddle's work for numerous examples of contradictory findings.

The last decade produced improvements largely through funds appropriated by the National Institute of Education (NIE). Current research is gradually moving toward analyzing teacher behaviors and whether or not certain behaviors are associated with educational outcomes. However, this direction in teacher effectiveness research still assumes students are relatively passive,

focusing primarily on what the teacher says and does. Therefore, it may come as no surprise to see little progress being made toward specifying what constitutes an effective teacher. Such a conclusion is reasonable if we conduct research under the assumption that teacher and student are interdependent, not linearly dependent.

The paradigm most often employed in teacher effectiveness research is the process-product paradigm (Doyle, 1977). The process-product paradigm relates teaching behaviors to student learning outcomes. Teacher effectiveness questions are formulated in terms of relationships between teacher classroom behaviors, which are processes, and measures of student learning outcomes, which are products. This approach, according to Gage (1963b) is based on a two-factor criterion-of-effectiveness structure that relates teacher variables directly to effectiveness indicators. Gage (1963b) also feels this type of research has direct application to teacher education and training which provides tools teachers can use to improve their instruction. However, the paradigm has some shortcomings in that it does not provide adequate focus on students' behaviors.

The "process-product" paradigm consists of some assumptions about teacher effectiveness. These assumptions are presented here with the intention of providing insight into areas where teacher effectiveness research failed to produce conclusive results so far. The "process-product" paradigm assumes that the teacher is the single most important influence on student achievement, while students are passive learners. Another assumption of the process-product paradigm is that teacher behaviors have a direct causal impact on student outcomes. A significant problem develops from this assertion. The majority of teacher-effectiveness research is correlational. Causal inferences solely based on correlations are insufficient. Perhaps more important is that the teacher-student relationship is seen as a logically linear relationship. The assumptions made in

this study conflict with such a cause-effect linear view of the teacher-student relationship. Rather, the assumption made in this study is that the teacher-student relationship is interdependent, as is the source-receiver relationship in communication processes.

In the past, "process-product" oriented research used mostly low-inference observation techniques to measure teacher effectiveness. Low-inference observation techniques are observation instruments that record the frequencies associated with teacher behaviors. The instruments require little inference on the part of the observer and user for classifying teacher behaviors into categories.

There are both positive and negative aspects associated with using low-inference observation techniques to measure teacher effectiveness. These aspects are discussed here to provide a clearer picture of the kind of research that dominates teacher effectiveness literature. It provides a classification to most of the research that is conducted in teacher effectiveness. One positive aspect of the low-inference observation technique is that replication is made more possible while enhancing objectivity. However, a negative aspect is that researchers tend to focus on the frequency of a teacher's behavior as the most salient aspect of teacher effectiveness. This implies that the more a teacher elicits a certain behavior, whether positive or negative, the better. The ramifications of focusing on frequency of behaviors are readily apparent. For example, a teacher may criticize students often during a given school day and it may be the one behavior that occurs most frequently of all the teacher's other behaviors. But the mere fact that it occurs the most does not insure that it will enhance teacher effectiveness.

Low-inference observation techniques such as Flanders' (1970) Interaction Analysis Categories (FIAC) appear in numerous studies of teacher

effectiveness. Unfortunately, this line of research is highly disputed and fraught with contradictory findings. For example, Flanders found that the amount of teacher praise was associated with greater pupil achievement, yet no difference between amount of praise used and pupil achievement was found by Felsenthal (1974), Harris and Server (1974), Herman et al. (1969), Hunter (1968), Perkins (1965), or Wallen (1966).

Recent investigations (Brophy and Evertson, 1974a, 1974b; Evertson and Brophy, 1974; McDonald, 1977; Program on Teaching Effectiveness, SCRDT, 1976; Stallings, 1974; Tikunoff, Berliner, and Rist, 1975) are moving away from low-inference observation systems like Flanders' FIAC. They are beginning to take into account a wider range of process variables with an increased emphasis on context variables such as grade level, content, student characteristics and the teacher-student relationship as a whole in the classroom. This may mean a shift is taking place from the "process-product" paradigm to other teacher effectiveness paradigms. The newer teacher effectiveness paradigms include more concentration on the student-teacher relationship than the "process-product" paradigm did.

Teacher Effectiveness and Communication Research

Communication researchers focus on primarily teachers' verbal and nonverbal communicative behaviors in their approach to teacher effectiveness research. Studies of the effects of nonverbal teacher behaviors are more numerous than studies focusing on primarily verbal behaviors. For example, Andersen (1979) was interested in the relationship between teacher immediacy (conceptualized as nonverbal behaviors that reduce physical and/or psychological distance between teacher and students) and teacher effectiveness. She found that teacher immediacy accounted for 46% of the variance in student affect toward

the teacher and only 18% of the variance in student behavioral commitment. The physical distance between teacher and student apparently affects students' affect for the teacher.

In another study of the relationship between nonverbal communicative behaviors of teachers and students' perceptions of the teacher, Beatty and Behnke (1980) researched the effects of nonverbal messages that contradict verbal messages emitted by the teacher. Results indicated that students' perceptions of their teacher's credibility were affected by perceived discrepancies between verbal and nonverbal messages. These studies provide a representation of the focus on the teacher effectiveness issue.

Research on the verbal aspects of teacher effectiveness was conducted by Norton (1977, 1978). His studies demonstrated an apparent relationship between teacher effectiveness and a teacher's particular communication style. However, in each of the communication studies reviewed on teacher effectiveness, there seems to be a lack of attention to student behaviors. Failure to measure student communicative behaviors may mean an incomplete view of the teacher-student relationship. There is one research area that focuses on student communicative behaviors. This line of research (McCroskey, Andersen, Richmond, and Whellen, 1981) studies the effects of communication apprehensive students on achievement. We still need to incorporate teacher communicative behaviors with students' behaviors to obtain a more complete picture of the teacher-student relationship in the classroom.

Current Problems in Teacher Effectiveness Research

At least three problems remain in teacher effectiveness research. The first problem lies with measuring learning outcomes. Many researchers use I.Q. tests and/or grade point averages as indicators of performance in the classroom

(Popham, 1974, Ebel, 1969). These measures may not be valid or reliable indicators of learning. The second problem is the apparent lack of attention to the interdependent relationship between the communicative behaviors of teachers and students. The communication field potentially offers this important perspective to education researchers (Berlo, 1960), , although so far it has failed to do so.

The third problem concerns the development of valid measures of teacher effectiveness. Validity issues concern whether or not teacher effectiveness instruments measure teacher effectiveness. For example, Jenkins and Bausell (1974) state that the human-relations aspect of teaching effectiveness is difficult to measure; yet it emerges as an important evaluation criterion in the minds of students and supervisors. Gurney (1977) argued that process is more important than product when evaluating teacher effectiveness. He found that the teacher's relationship with the class was the highest-ranked criterion of teacher effectiveness while years of teaching experience—which is a rather standard measure of teaching competence—was ranked the least important of the criteria. Gurney (1977) also found that dynamism and warmth appear to be important aspects of teaching along with teacher flexibility, personalization of teaching, good rapport and sensitivity to student's point of view.

Evaluation of Teacher Effectiveness

Gurney's (1977) research is an example of the multitude of research on teacher effectiveness. Evaluation of teaching is increasingly important when assessing productivity in the university. In a study conducted by Cochran and Moodie (1978), responses from college deans in 1966 and 1974 were compared. The study found that much greater emphasis was placed on teacher effectiveness in 1974 than in 1968 and teacher effectiveness was emphasized more than any

other aspect such as teaching experience and number of years teaching.

A debate is iterated over whether or not student evaluations of teacher effectiveness are valid and reliable. Butler and Tipton (1977) presented arguments for and against student evaluation of teacher effectiveness. Arguments against student perceptions included the accusation that students rate teachers on personality dimensions, not on what the students learn. Also Butler and Tipton (1977) claimed that ratings are influenced by variables irrelevant to teaching. On the positive side of the debate, for example, arguments in favor of student evaluations of teacher effectiveness included the fact that student ratings are reliable with 25 raters or more and student grades are unrelated to evaluation of teachers (Butler and Tipton, 1977).

Korth (1979) found that extraneous variables were related to student ratings such as interest in the material, place and time the class meets, and the size of the class. Even though some extraneous variables may influence student ratings of their teachers, Frey (1976) contends that student ratings are valid indicators of teacher effectiveness. His study showed that ratings collected before the final examination were not significantly related with ratings collected after students received their final grade. This study may provide support for the assertion that grades are unrelated to student evaluations of teachers as Butler and Tipton (1977) contended. However, Frey's findings should be interpreted with caution because ratings taken before the final exam may represent an auto correlation bias. A more appropriate measure would be to obtain ratings before the exam, and at least 12 days after the final exam (Goss and Wenburg, 1970).

However statistically valid student ratings may or may not be, some students feel that evaluations of their teacher's effectiveness are meaningless to teachers. A survey of college students conducted by Penfield (1978) indicates that students feel that while rating forms provide an effective method of

evaluation, the results are ignored by many teachers.

SUMMARY

This chapter provided an historical view of the research on teacher effectiveness with a focus on the lack of progress being made since 1900. The paradigm most frequently used in teacher effectiveness research, the "process-product" paradigm, was presented. Problems relating to assumptions made by researchers using the "process-product" paradigm were identified. Some studies that investigated teacher communication behaviors and teacher effectiveness were also reviewed. The last section of the chapter included a discussion of the measure of teacher effectiveness. The next chapter describes the social style construct which may represent a way of resolving some of the issues surrounding the central question of this study: Is teacher effectiveness enhanced when teacher and student utilize the same social style when communicating.

CHAPTER II

RESEARCH ON SOCIAL STYLE

Social style was operationalized by Buchholz, Lashbrook, and Wenburg (1976) who developed the Social Style Profile Instrument (SSPI). The goal of social style research is to find a simple and effective method for describing another person's social behavior permitting the development of communication strategies and tactics.

Social style theory is conceptually rooted with literature on person perception. Heider (1958) pointed out that the perception of the "self" and the "other" contribute to meanings we assign to the communication situation. We act toward others based upon the meanings we have for them. Teacher-student relationships are no less subject to this phenomenon. It implies that students' perceptions of teachers contribute to the meanings students assign to the classroom interactions.

Communication behaviors become data for individuals to assess and determine social style. A particular social style may be either effective or ineffective depending on the social situation. Thus, social norms of the social setting are the reference: Norms are judged to vary according to social setting. Deviation from a norm in a social setting may be said to be undesirable, but that same social style may be preferred in a different social setting. For example, joke telling may be inappropriate in a classroom setting, but may be desirable at a social gathering such as a "happy-hour."

The social style instrument (Buchholz et al., 1976) is based on perceptions made by others, as well as by one's self. The relative stability of the social style construct exists in a variety of situations (Merrill, 1974; Buchholz et al., 1976). The construct is described as three-dimensional, consisting of assertiveness, responsiveness and versatility (Merrill, 1974; Buchholz et al., 1976; Knutson and Lashbrook, 1976; Lashbrook, Knutson, Parsley, and Wenburg, 1976). These three dimensions combine in several different ways to permit identification of the behavioral patterns of a communicator's social style. First, let us look at its dimensions.

DIMENSIONS OF SOCIAL STYLE

Assertiveness

The assertiveness dimension refers to perceived ability to state one's own opinions forcefully. As Knutson (1980, p. 3) states: "Highly assertive individuals 'tell', where-as low assertive persons 'ask'." Perceived assertiveness is described as related to the frequency with which a person attempts to control or influence others. According to V. J. Lashbrook and W. B. Lashbrook (Wilson Learning Corporation, 1980), highly assertive individuals are conceptualized as active, confident, aggressive, ambitious, challenging, competitive, fast-paced, risk-taking, opinionated, and directive. On the other hand, low assertive people are reserved, easy going, submissive, private, quiet, supportive, cooperative, deliberate, risk-avoiding, and unaggressive. It is often viewed as a task-oriented dimension. Cummings and Renshaw (1979) describe assertiveness in the dispositional dimensions of communication behavior in their language research using SLCA (Syntactic Language Computer Analysis) variables. Similarly, Richmond and McCroskey (1979) utilize assertiveness construct in organizational communication as part of a scale termed Management Communication

Style (MCS).

Research indicates that persons scoring high on assertiveness are often perceived favorably. One study in a business setting found that highly assertive individuals were perceived as more powerful and competent than low assertive individuals (Sullivan, 1977). Using an adult population of primary relationships, Snavely (1977) found that highly assertive persons were perceived as more extroverted, powerful, trustworthy, versatile, and more similar in perceived values than low assertive individuals. Using a college population, Lashbrook et al., (1976) also found the same relationships between perceptions of high versus low assertive individuals and attributes such as versatility and trustworthiness.

Assertiveness as a behavior in the classroom can be manifested by either teachers or students. Teacher assertiveness can be reflected by a teacher's control of the classroom. Such control may be evidenced by the teacher's ability to maintain student attention, motivate student productivity and activity, and promote the learning environment (Knutson, 1980). On the other hand, student assertiveness may be evidenced by monopoly of discussions, answering a majority of the questions posed, and feeling comfortable asking questions (Knutson, 1980).

Variables associated with the assertiveness dimension reportedly have been linked to effective teaching, thus providing support for the importance of assertive style in the classroom context. For example, Deshpande, Webb, and Marks (1970) found that college students perceived effective engineering instructors as controllers who adequately provided structure for the course. Roberts and Becker's (1976) research indicates that high school industrial arts students perceived "good" teachers as those whose behaviors were emphatic, forceful, and talkative. Furthermore, Ryans (1960) found that education administrators, teachers and students characterized effective teachers as ones who initiate, exhibit self-confidence, direct discussions, and maintain progress

toward objectives.

Responsiveness

The second dimension is perceived responsiveness and is defined as a person's willingness to express feelings or emotions (Knutson, 1980). Research at Wilson Learning Corporation (Lashbrook and Lashbrook, 1980) argues that highly responsive individuals are characterized as warm, approachable, people-oriented, emotional, permissive, subjective, easy going, open, sociable, and dramatic. Individuals who are low on responsiveness are cool, independent, aloof, rational, objective, impersonal, cautious, and businesslike. It is a relationship-oriented dimension of social style.

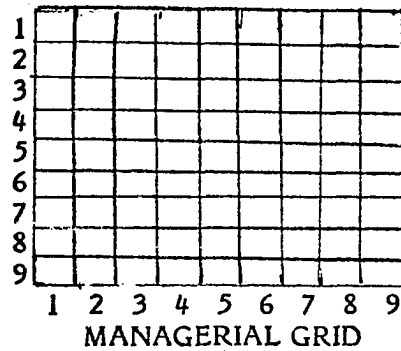
Researchers investigated responsiveness in connection with interpersonal attributes such as sociability and trust and found that responsiveness is positively associated with sociability, versatility, trust, social attraction, and interpersonal solidarity (Sullivan, 1977; Snavely, 1977). Snavely (1977) found that highly responsive individuals were perceived to be more versatile, sociable, extroverted, and trustworthy than individuals who are low on responsiveness. W. Lashbrook and associates (1976) also supported Snavely's findings on dimensions of versatility and trust. These results link responsiveness to dimensions of credibility. McCroskey, Jensen, and Valencia (1973) indicate that people tend to evaluate a communication source on at least five dimensions. These five dimensions are: Competence, which is a source's knowledge of the subject; character, an apparent trustworthiness of the source; composure, which is the lack of stress or anxiety; sociability, the likeableness of the source; and extroversion, which is an outgoing personality and talkativeness of the source. Character, sociability, and extroversion are elements of credibility that seem to be similar to the responsive dimension of social style.

Responsiveness is perceived by others as a positive attribute. For example, Sullivan (1977) found that highly responsive people were also perceived to be less dogmatic than individuals who are low on responsiveness perhaps because people who were low on responsiveness were unwilling to listen to another person's point of view. Highly responsive people tend to be perceived as more emotional, whereas low responsive individuals tend to control their emotions so as not to display them (Snively, 1977).

Based on these research findings, it follows that classroom teacher-student styles indicative of high responsiveness are characterized as emotional, sensitive, social, understanding, and approachable (Knutson, 1980). One would also expect that highly responsive teachers would generally be perceived as more effective teachers by highly responsive students. Andersen (1979) provides support for the assertion that warm, friendly, affiliative, and responsive teachers are perceived as more effective teachers but failed to account for the type of student evaluating the teacher. After investigating nonverbal communicative behaviors of college teachers in the classroom, Andersen (1979) found that both observable behaviors and students' perceptions of instructors' immediacy were significant predictors of affective learning and behavioral commitment to the teacher, course, and related content area. Greater teacher immediacy produced greater positive student liking or affect. Blake and Mouton (1964) describe a grid that represents five leadership styles: 1,1; 1,9; 9,1; 5,5; and 9,9 (see Figure 1). The 9,1 leader is primarily concerned with production task accomplishment with little, if any, concern for people. The 1,1 style reflects minimal concern for both people and production, and the 5,5 style reflects a moderate concern for both. The 1,9 style reflects a minimal concern for production and maximal concern for people. The 9,9 leader is viewed as integrating a maximum concern for production with a maximum concern for

people. The grid enables leaders to identify their own leadership styles and is presented here because it illustrates similarities with the high versus low responsiveness dimension of social style.

Figure 1



Versatility

The third dimension of social style is perceived versatility and refers to an individual's ability to adapt to other styles and situations. This dimension mediates the effectiveness of one's social style. Even though every individual has a more or less consistent social style, the ability to modify one's style as one interacts with others indicates versatility and effectiveness. Wilson Learning Corporation research describes highly versatile individuals as generalists, adaptable, tolerant of ambiguity, negotiable, flexible, and multidimensional in thinking. Low versatility in people is characteristic of specialists who are often single minded, predictable, intolerant of ambiguity, and inflexible. Researchers found that versatility is associated with a number of other interpersonal attributes such as trust, power, sociability, character, composure, competence, and task attraction. For example, Sullivan (1977) reported moderately positive correlations between versatility and these variables. Bacon (1978) indicated that a relationship existed between versatility and tolerance of ambiguity.

The relationship between versatility and the other two social style dimensions was investigated by Lashbrook et al., (1976). They found a positive relationship between versatility and trust, and between versatility and responsiveness and assertiveness. The latter finding supports the notion that versatility mediates the other two social style dimensions.

Versatility may affect the assumption that matching student social styles with teacher social styles will increase teacher effectiveness. If a teacher can exhibit versatility in social style, then he or she can effectively appeal to all types of student social styles. Since highly versatile teachers can adapt to the communicative behaviors of their students, we may see higher students' ratings of versatile teachers than teachers who are unable to adapt to their students' styles. Many instructional paradigms espouse adaptation to individual student needs or learning styles (Davies, 1973; Keller and Sherman, 1974; Kemp, 1971; Furth, 1969; Vargas, 1977). Highly versatile teachers would be expected to accommodate their own style of communicating to the student's individualized communication style. Let us now turn to ways these dimensions can be combined to form an individual's social style.

BEHAVIORAL STYLES

An individual's social style is determined by the sum of responses to the Social Style Profile Instrument for each dimension (assertiveness, responsiveness, and versatility). To classify people into behavioral styles, medians are used to separate high from low scores on the three dimensions.¹ The two dimensions, assertiveness and responsiveness, generate a matrix (see Figure 2) of four social styles: (1) high assertiveness and high responsiveness, (2) low assertiveness and low responsiveness, (3) high assertiveness and low responsiveness, and (4) low assertiveness and high responsiveness. Each of these four styles were labeled as:

(1) analytic, (2) amiable, (3) driver, and (4) expressive. The following matrix provides a pictorial representation of the four social styles.

Figure 2

		Assertiveness	
		High	Low
RESPONSIVENESS	High	Expressive	Amiable
	Low	Driver	Analytic

Note that in each of the following descriptions of the four social styles,

versatility is not a determining factor. The omission of versatility in the make-up of the four social styles is not addressed by the original researchers (Buchholz, Lashbrook, and Wenburg, 1976).

The following descriptions of the four social styles, provided by Wilson Learning Corporation (1980), enhance one's understanding of what it means to be classified into one of the four social styles.

Analytic Social Style

Analytic social styles are moderately low in both responsiveness and assertiveness. Wilson Learning Corporation describes "analytics" as critical, indecisive, stuffy, picky, moralistic, industrious, persistent, serious, exacting, orderly, etc. They are best matched with situations that require thought and technical orientations. They like to have all the facts and data in order to feel that they have thoroughly done the job necessary for problem solving and logical analysis. Likewise, they take their time in order to assure quality and accuracy. Analytics strive to minimize errors, mistakes, risks, and exposures in performing

activities.

Amiable Social Style

"Amiables" are moderately low in assertiveness, but moderately high in responsiveness. Wilson Learning Corporation describes them as conforming, unsure, ingratiating, dependable, awkward, supportive, respectful, willing, and agreeable. Amiables are usually matched with situations which call for a relationship and supportive orientation. They like to get a job done cooperatively by getting people involved in group activities. In order to get results, amiables move deliberately by encouraging group identification and pride. These are maintained by building harmony in relationships.

"Driver" Social Style

"Drivers" are low in responsiveness and high in assertiveness. They have been described as pushy, severe, tough, dominating, harsh, strong willed, independent, practical, decisive, and efficient. They are matched to situations best requiring action and control. Drivers need to have situations requiring a job done in the most practical and efficient manner, but they must also control all aspects of the activity. They are likely to move quickly but systematically and with an emphasis on organizing for long term results.

Expressive Social Style

"Expressives" are high in both assertiveness and responsiveness. They perform best in situations calling for an intuitive and inspirational orientation, however, expressives would do moderately poorly in a thoughtful and technical orientation. They have been described as manipulative, excitable, undisciplined, dramatic, friendly, etc. This style requires a person to get a job done with enthusiasm and excitement, using hunches and opinions to react to the immediate demands of an activity. For short term results, quick movements are best for this

person until after activities are underway; then there will be time to get organized for long term considerations.

VALIDITY AND RELIABILITY OF SOCIAL STYLE

Any instrument developed for both research and diagnostic purposes must demonstrate reliability and validity. These important concepts will be discussed for the Social Style Profile that Buchholz et al., (1976) developed.

Reliability of Social Style

Using Cronbach's alpha coefficient of reliability, W.B. Lashbrook and V.J. Lashbrook (Wilson Learning Corporation, 1979) reported alpha reliabilities for each dimension of the Social Style Profile as follows: assertiveness, .89; responsiveness, .86; and versatility, .82. According to the American Psychological Association (APA Committee on Psychological Tests, 1974) acceptability range of .60-.90 or above, this instrument is a reliable measure. Lashbrook and Lashbrook (Wilson Learning, 1979) also report acceptable reliability coefficients for inter-rater agreement in perceiving others' social style under any conditions, i.e., amount of training and number of observers. The reliability coefficients range from .91 to .73 as the number of observers decrease from 8 to 3 observers. For more specific breakdown of figures for each number of observers, see (Wilson Learning, 1979, p.5).

Validity of Social Style

Validity research on SSPI (American Psychological Association Committee on Psychological Tests, 1974) is extensive. Content validity was supported by several sources, i.e. Bacon (1978), Buchholz (1976), Snively (1977), and Sullivan (1977). For example, Bacon (1978) tested social styles and tolerance for ambiguity with college students. Snively (1977) used primary relationships

(friends, co-workers and acquaintances) in classifying people into the four social styles. Sullivan (1977) used co-workers in a large manufacturing firm to correlate interpersonal variables with social style.

Further support for content validity concerns the manner in which scale items were selected. Scale items were selected on the basis of previous research and results of factor analysis on the original sample. The items were subjected to correlational and factor analysis with varimax rotation. Only those items with factor loadings greater than or equal to .60 (with no secondary loadings above .40) on the appropriate dimensions were selected for the Social Style Profile (W.B. Lashbrook and V.J. Lashbrook, Wilson Learning Corporation, 1979, p. 6).

Construct validity was supported through the use of discriminant analysis. Lashbrook (1975) found that the measures contained in the Social Style Profile distinguished correctly more than 95% of the people surveyed according to their perceived social style. Sullivan and Snively provide additional support for the instrument's construct validity. Sullivan (1977) found highly assertive people to be perceived as more powerful than individuals low on assertiveness. He found responsiveness to be positively correlated with sociability, social attraction, and interpersonal solidarity. He also found that highly responsive people were perceived to be less dogmatic than individuals who were low on responsiveness. Snively (1977) found that highly assertive people were perceived as more extroverted than low assertive individuals. He also found that highly responsive people were perceived as more sociable and extroverted than lowly responsive people.

Support for concurrent validity was found in Sullivan's (1977) research. Using measures of assertiveness, responsiveness, and versatility on the Social Style Profile to classify people as "drivers", "expressives", "amiables", and "analyticals", he was able to support differences across styles with a variety of

outside criteria such as trust, sociability, social attraction, and power (Lashbrook and Lashbrook, Wilson Learning, 1979, p. 8).

Finally, predictive validity was demonstrated by several researchers who found support for predicted relationships between social style and other variables such as amounts of interaction and degree of attraction among small group members (Parsley, 1976), communication apprehension (Lashbrook and Knutson, 1976), interpersonal attraction in the acquaintance process (Snaveley, 1977), modes of resolving conflict or tension (Lashbrook, Lashbrook, Buchholz, and Larsen, 1979), and perception of effective teachers (Knutson, 1979). Of the 41 empirical studies identified which use the social style construct, 23 of these studies link social style with some communication variable (W. B. Lashbrook and V. J. Lashbrook, Wilson Learning Corporation, 1979). Thus, the support cited here shows that the Social Style Profile is a valid and reliable instrument.

Social Style and Teacher Effectiveness

The Social Style Profile Instrument was originally designed for organizational contexts (Wilson Learning Corporation). Even though its design did not focus on teaching behaviors specifically, the social style construct does identify basic communication behaviors like assertiveness, responsiveness, and versatility that can be relevant and applicable to classroom behaviors of teachers.

However, only one study used the Social Style Profile with teachers and students in the classroom context, providing an important impetus for this research. The single classroom study using social style was conducted by Knutson (1980) who examined the way in which college teachers viewed their social style as compared with their students' perceptions of their teacher's social style. She found that while teachers may perceive their assertiveness and responsiveness somewhat similarly to student perceptions, teacher perceptions of their own versatility were not significantly related to student perceptions of their teacher's

versatility. Discrepancies between student and teacher perceptions of the teacher's versatility may be due to differences in the way the teachers view themselves as communicators in the classroom and the way students perceived the amount of versatility of the teacher in that same environment. Versatility may not be defined clearly enough or it may have different connotations for different individuals. Another explanation for Knutson's findings is that the versatility dimension for social style may be correlated with the other two social style dimensions rather than being an independent, third dimension.

SUMMARY

This chapter provided the theoretic background and research on social style as a construct. This chapter also included the origins of social style theory and the development of the Social Style Profile. The three dimensions of social style (assertiveness, responsiveness, and versatility) were explained along with the four derived social styles (analytic, amiable, driver, and expressive). Even though the Social Style Profile has been used predominantly in organizational settings, classroom implications were discussed especially in light of Knutson's (1979, 1980) findings. The potential use of this construct and instrument in the classroom is rich, yet relatively untapped. For these reasons, social style was included in this study as described in this chapter. The next chapter presents the research questions that guide this study and the hypotheses generated from these questions.

CHAPTER III

RESEARCH QUESTIONS AND THEIR TESTING

The previous chapter discussed literature aimed at exploring social style as a construct for communication study, especially in relation to teacher effectiveness. It provided the basis for this study and the research questions generated from them. These research questions and review of previous research provide support for the formation of some important hypotheses.

Hypothesis 1: There will be a significant relationship between teacher effectiveness and teacher social style.

Does the social style of the teacher enhance teacher effectiveness? Knutson (1980) illustrated an apparent link between a teacher's social style and students' perceptions of their teachers' effectiveness.

Hypothesis 2: There will be a significant relationship between teacher effectiveness and student social style.

Does the social style of students affect teacher effectiveness? We know that the communication in the classroom is an interdependent process between student and teacher. It would be difficult, therefore, to talk about the variables affecting teacher effectiveness without considering the student's social style. The second hypothesis in this study focuses on the student's social style and teacher effectiveness.

Hypothesis 3: There will be a significant difference in teacher effectiveness scores between those teachers and students with matched social styles and teachers and students who are not similar in social style.

Do principles of homophily explain teacher effectiveness when accounting for similarity or differences between teacher and student social styles?

Homophily principles (Rogers and Bhowmik, 1970; Rogers and Shoemaker, 1971) states that communicators who are similar to one another on a number of attributes such as educational level, age, attitudes, and values will be more likely to communicate with each other than dissimilar individuals. Also, communication effectiveness is said to increase between individuals who are similar. A parallel situation is expected to exist between teachers and students who are similar in social style.

Hypothesis 4: There will be a significant difference in the amount of teacher assertiveness, responsiveness, and versatility and students' perceptions of their teacher's effectiveness.

Does the amount of teacher assertiveness, responsiveness, and versatility affect students' perceptions of their teacher's effectiveness? Social style theory presupposes that, in the classroom, a teacher needs to be high in assertiveness, high in responsiveness, and highly versatile to be effective. No direct test of this assertion has been made, however, several educators espouse that effective teachers should have these characteristics.

Procedures

Subjects

Students (N = 520) selected for this study were from sections of the basic undergraduate communication course, Principles of Communication at the University of Oklahoma and an undergraduate business course at Central State University. Five sections of the basic communication course with approximately twenty-five students in each class were used in this study. Thirteen sections of

the undergraduate business course with approximately 30 students in each section were also used in this study. Students in the business courses are believed to be similar to students in communication courses. However, their responses were analyzed separately to see if a difference between groups of students exists.

An independent measures t-test was calculated between the University of Oklahoma students and Central State University students to see if a significant difference occurred between the two university populations. If a significant difference existed between the two samples drawn from the two universities, each hypothesis would have to be tested for each school separately because the populations would be different. The t-test resulted in a $t=.945$, $df=508$ which was not significant, even though the power calculations of 52 subjects for each group were exceeded. However, if no significant differences were found with 510 subjects, there would not be significant differences showing up with smaller sample sizes. Since there was no difference between the two schools who filled out the teacher effectiveness instrument, the two groups were combined for the analysis of the four hypotheses.

Data Collection

The purpose of the study was explained to the class and complete confidentiality was ensured by the researcher while securing informed consent from the subjects who were willing to participate in the study (see Appendix A). The Social Style Profile was administered to teachers and students. Upon completion of the Social Style Profile (see Appendix B), teachers left the classrooms to facilitate more honest responses from students on the teacher effectiveness instrument. This procedure is standard for all teacher evaluations conducted at the University of Oklahoma. Then, the students completed the teacher effectiveness instrument to measure their perceptions of their

instructor's teacher effectiveness (see Appendix C). The teacher effectiveness instrument is a common form of an instructional improvement questionnaire (Pohlman and Elmore, 1976) which consists of four parts: (1) a student biographic section; (2) an instructor evaluation section; (3) a course evaluation section, and (4) an optional section for individualized questions by faculty. The instrument was a combination of items taken from the Purdue Rating Scale, the Idea Form, and the University of Oklahoma College of Arts and Sciences Instructor Evaluation Form. The Social Style Profile and the teacher effectiveness instrument were administered by the experimenter during a single class period.

DEPENDENT MEASURES

Teacher Effectiveness Instrument

Each of the four hypotheses included the use of a teacher effectiveness instrument that consisted of 35 items (see Appendix C). Descriptive statistics for the 35 items appear in Appendix H. The scale items were first subjected to factor analysis using a principle components solution. Factor extraction was followed by a quartimax rotation in order to simplify the items. Alternative rotations (varimax and equimax) were performed, but did not yield any contradictory information to explain the factor structure. It was considered important to ensure that each item maximally loaded on one factor, thus simplifying the items, not the factors (varimax). A simplified item along with a simplified factor was considered a bonus should it produce similar results to the varimax rotation. Only those items with factor loadings greater than or equal to .60, with no secondary loadings greater than or equal to .40, were selected for the testing of the four hypotheses (McCroskey and Young, 1979). Appendix D shows the factor loadings for the 35 rotated items.

Using an eigenvalue of 1 or greater as the criterion for explaining the

factor structure, the quartimax rotation yielded a one factor solution with an eigenvalue of 16.91647, accounting for 82.6 percent of the variance. The eigenvalue for the second factor was 1.42074, contributing an additional 6.9 percent of the variance to be explained. The large variance accounted for by the first factor versus the second made it possible to simplify analysis of teacher effectiveness by using the one-factor solution. Validity of the one-factor solution is represented by h^2 values presented in Table 1.

Based on the .60/.40 purity index criterion, 21 items were accepted for use in the teacher effectiveness instrument. Table 1 presents the 21 items and their correlations with each other item.

Table 1
Correlations for the 21-item Teacher Effectiveness Instrument

	<u>r</u>	<u>r²</u>	<u>h²</u>
My instructor has an effective style of presentation.	.82	.67	.75
My instructor makes learning easy and interesting.	.85	.72	.78
My instructor holds the attention of the class.	.79	.62	.70
My instructor stimulates interest in the course.	.83	.69	.75
My instructor displays enthusiasm when teaching.	.62	.38	.42
My instructor makes me feel involved with this course.	.77	.59	.64
In this course, I always felt challenged and motivated to learn.	.79	.62	.73
My instructor has stimulated my thinking.	.79	.62	.69
My instructor's explanations and comments are helpful.	.79	.62	.66

Table 1 Continued

Correlations for the 21-item Teacher Effectiveness Instrument

	<u>r</u>	<u>r²</u>	<u>h²</u>
In this course, I have learned to value new viewpoints.	.64	.41	.45
My instructor recognizes and rewards success in this course.	.61	.37	.50
A teacher/student partnership in learning is encouraged.	.68	.46	.56
My instructor readily maintains a rapport with this class.	.74	.55	.61
Challenging questions are raised for discussion.	.62	.38	.56
The teaching strategy used in this course is appropriate.	.80	.64	.70
I highly recommend this course.	.75	.56	.58
I would enjoy taking another course from this instructor.	.85	.72	.79
I like the way the instructor conducts this course.	.88	.77	.84
My instructor motivates me to do my best work.	.80	.64	.67
Overall, this course is among the best I have ever taken.	.79	.62	.65
Overall, this instructor is among the best teachers I have known.	.84	.71	.74

All except one of the 21 items came from the Purdue Rating Scale. Item 17 ("I would enjoy taking another course from this instructor") came from the Idea Form. None of the items came from the University of Oklahoma Arts and Sciences Form. The deleted items did not load on any other factors according to the .60/.40 purity index criterion. Six out of the 14 deleted items came from the Purdue Rating Scale. The rest of the deleted items came from the Idea Form.

Appendix E shows the deleted items and their correlations. Summated raw scores from the 21-item teacher effectiveness instrument were used in the data analysis rather than the factor scores because of their theoretic and applied utility.

Validity of the Teacher Effectiveness Instrument

Since the teacher effectiveness instrument developed for this study consists of a single common factor, one can argue in favor of intrinsic validity. According to Guilford (1954, p. 399) intrinsic validity is the degree to which a test measures what it measures or when a single common factor's communality is as great as its reliability. This is the case with the teacher effectiveness instrument. Relevant validity is also appropriate in this situation and is somewhat parallel to intrinsic validity. Guilford (1954) describes relevant validity as the degree to which a test measures factors that are common to other measures. The index of relevant validity is \underline{h} or the square root of a test's communality. This is the same as reliability for an instrument that has a single common factor structure. \underline{h} indicates the upper limit of a test's correlation with any other measure which is a measure of validity.

Social Style Profile Instrument

The Social Style Profile Instrument (Buchholz et al., 1976) was used in each of the four hypotheses (see Appendix B). Descriptive statistics are presented in Appendix I. Medians were used to determine the social styles of each subject based on previous research (Buchholz et al., 1976). Furthermore, Pearson's coefficient of skewness which tests differences between means and medians was calculated for the assertiveness and responsiveness dimensions. Results show nonsignificance for the assertiveness dimension, $Sk = -.41$. Non significant differences between the mean and median for responsiveness dimension was also obtained ($Sk = -.08$).

Certain items measured one of the three dimensions of social style. Items 2, 11, 12, 14, 16, 24, 26 and 27 were used to measure assertiveness. Items 1, 7, 9, 23 and 25 were used to measure responsiveness. Items 3, 4, 19 and 21 measured versatility. Cronbach's alpha coefficient of reliability was computed for the three dimensions. The alpha reliability for assertiveness was .88, for responsiveness, .85, and for versatility, .77. This shows that the dimensions demonstrate high internal reliability. Figure 3 shows the correlation between the dimensions.

Figure 3

	Assertiveness	Responsiveness	Versatility
Assertiveness	1.00		
Responsiveness	.27	1.00	
Versatility	.10	.33	1.00

Figure 3 shows that the dimensions are not highly correlated with each other.

Median splits on the total possible scores received on the Social Style Profile determined the social styles of each subject. Each student's style was compared with his or her teacher's social style and grouped into either the similar or dissimilar group.

A median test was calculated to determine whether significant differences existed between total possible medians and the actual medians obtained in the data (Guilford and Fruchter, p. 216). A non-significant $\chi^2 = .7$, $df = 1$, was obtained. It is generally agreed among researchers that when $\chi^2 \leq 1.00$, a possible problem exists in measurement; in this case, the social style scales.

Data Analysis

For the first hypothesis, responses gathered from teachers on the Social Style Profile and their students' responses on the teacher evaluation instrument of teacher effectiveness were used to determine whether there was a relationship

between teacher effectiveness and teacher social style. The relationship between teacher effectiveness and teacher social style was determined by Pearson's r Correlation Coefficient. The significance level achieved for this test was set at .05. More important, however, is the magnitude of the coefficient of determination. A coefficient of determination that is greater than .50 is considered acceptable. A small coefficient may be significant, but not meaningful.

For the second hypothesis, responses gathered from students on the Social Style Profile and their perceptions of their teacher's effectiveness as recorded on the teacher effectiveness instrument were used to determine whether there was a relationship between teacher effectiveness and student social styles. The relationship between teacher effectiveness and student social styles was determined by Pearson's Correlation Coefficient. The significance level was set at .05 and the magnitude of the relationship and variance explained was noted.

The third hypothesis was tested using responses obtained from teachers and their students on the Social Style Profile and students' responses on the instructor evaluation form for teacher effectiveness. In order to determine whether a difference in teacher effectiveness existed between teacher and student who were matched on social style and those teachers and students dissimilar in social style, an independent measures t test was computed between the two groups. The significance level required was .05. An a priori calculation of power was made to insure adequate sample size for each of the two groups. Also, a point biserial r was calculated between the two groups (considered dichotomous) and the teacher effectiveness scores in order to provide a basis for evaluating the strength of the relationship.

The fourth and final hypothesis was tested using teachers' responses on

the Social Style Profile and students' perceptions of their teacher's effectiveness as reported on the teacher effectiveness instrument. Using median splits, teachers were classified as either high or low on assertiveness, responsiveness, and versatility. A 2X2X2 factorial design (responsiveness by assertiveness by versatility) was employed to assess the effects of these three dimensions of social style on teacher effectiveness. Teacher effectiveness scores as assessed by the teacher effectiveness instrument was the dependent variable used to determine whether a significant difference occurred between teachers classified as high or low on assertiveness, responsiveness, and versatility. A three way analysis of variance was computed for the dependent measure and the significance level achieved for this test was set at .05.

Since the F statistic is robust to violations of homogeneity of variance when cell sizes are equal, teachers were randomly selected within each category of high and low assertiveness, responsiveness, and versatility to insure equal sample size within each cell. An a priori calculation of power was made to insure adequate sample size for each cell.

Main and interaction effects were examined using a Multiple Classification Analysis and the significance level as the criterion. Each of the three main effects, assertiveness, responsiveness, and versatility and each of the interactions, assertiveness by responsiveness, assertiveness by versatility, responsiveness by versatility, and assertiveness by responsiveness by versatility was examined from results obtained by the Multiple Classification Analysis.

SUMMARY

Based on the research questions of this study, four hypotheses were constructed. Subject selection and attributes as well as procedures for data

collection and analysis were described in this chapter. Data analysis was discussed for each of the four hypotheses to be tested. The next chapter reports the findings of this study.

CHAPTER IV

RESULTS

Data analysis showed that evidence exists to support three of the four research hypotheses, with only partially successful results on the last hypothesis. Before reporting the results of the hypotheses, several issues surrounding assessment of the validity of the dependent variable (teacher effectiveness) are presented.

PRELIMINARY ANALYSIS

Sampling Validity

In addition to the teacher effectiveness instrument as a dependent measure, performance as measured by student grades and attendance were also used as dependent measures of teaching effectiveness. To determine whether the other two dependent measures—pupil predicted and actual grades and attendance—were useful criterion measures of teacher effectiveness, correlation coefficients were calculated comparing predicted grades, actual grades and attendance with teacher effectiveness. A separate assessment was made on the relationship between predicted and actual grades. The correlation between teacher effectiveness and students' actual grade was $r=.15$ ($p=.001$, $df=508$). Even though r was significant at the .001 level, an $r=.15$ is a relatively low correlation between teacher effectiveness and actual grade. A more meaningful measure is the coefficient of determination (r^2) which shows how much variance is explained by the two variables. Results showed $r^2=.02$ and illustrates the lack of a meaningful

relationship between teacher effectiveness and students' actual grade.

The correlation between teacher effectiveness and students' predicted grades was calculated because the students predicted what their grades would be at the same time that they evaluated their teacher's effectiveness. Therefore, it may be reasonable to assume that a student's perception of the grade he or she would receive in the course may affect the student's evaluation of the teacher's effectiveness. Pearson's Product Moment Correlation Coefficient for teacher effectiveness and predicted grade was $r=.11$ ($p=.02$, $df=508$). However, only one percent of the variance ($r^2=.01$) explains the covariance of these two variables. The correlation between teacher effectiveness and attendance was also computed with $r=.06$, ($p=.155$, $df=508$). The correlation between teacher effectiveness and attendance was not significant. The correlation between predicted grade and actual grade was computed to determine whether students were accurate in perceiving what their actual grade would be. The correlation between perceived grade and actual grade received was $r=.62$ ($p<.001$, $df=508$). The amount of explained covariance between the two variables was $r^2=.40$. Therefore, students were able to predict with reasonable and meaningful accuracy what their actual grade in the course would be.

The low correlations between teacher effectiveness and a student's perceived, actual grade and attendance dictated the elimination of student performance and attendance in the actual testing of the four hypotheses.

Hypotheses

Four hypotheses were postulated in the previous chapter. They were:

Hypothesis 1: There will be a significant relationship between teacher effectiveness and teacher social style.

Hypothesis 2: There will be a significant relationship between teacher

effectiveness and student social style.

Hypothesis 3: There will be a significant difference in teacher effectiveness scores between those teachers and students with matched social styles and teachers and students who are not similar in social style.

Hypothesis 4: There will be a significant difference between the amount of teacher assertiveness, responsiveness, and versatility and student evaluations of their teacher's effectiveness.

To determine teachers' and students' social styles, medians were used. The median for responsiveness was 20, the median for assertiveness was 32 and the median for versatility was 16. These numbers represent the actual midpoints between the highest and lowest possible scores on each dimension.

To determine whether a significant relationship existed between teacher effectiveness and teacher social style (H_1) Pearson's Product Moment Correlation Coefficient was calculated using the 21-item teacher effectiveness instrument and the teachers' social style profile scores. While the relationship was significant ($r=.17$; $p=.01$; $df=508$) the magnitude of the relationship was not high and the amount of variance explained ($r^2=.028$) shows approximately 3 percent of the variance can be explained by the relationship between teacher effectiveness and teacher social styles.

The second hypothesis asserted a significant relationship should exist between teacher effectiveness and student social styles. Results showed a significant correlation exists ($r=.14$; $p=.002$; $df=508$). Again, however, the correlation was weak as the amount of variance explained by student social styles and teacher effectiveness scores ($r^2=.02$) was small.

Hypothesis 3 asserted a significant difference should exist in perceived teacher effectiveness when accounting for homophilous versus heterophilous social styles. One group consisted of students who had the same social styles as

their teachers and the second group consisted of students who had different social styles than their teachers. Power calculations yielded a sample size of 52 for each group when the power is .95. A random sample of 52 students was selected from each group (Blalock, 1980).

To determine whether a significant difference existed between the similar (homophilous) and different (heterophilous) groups, an independent measures t-test was calculated, and found to be significant. Results show that homophilous (similar) learners perceived greater teacher effectiveness than heterophilous (different) learners, ($t=-4.3$; $p<.001$; $df=102$). A point-biserial r was calculated because the underlying assumption of the independent variable is dichotomous and the t obtained in the third hypothesis was significant (see Guilford and Fruchter, 1978, p. 298). The point-biserial r was significant ($r_{pb}=-.42$; $p<.01$; $df=102$).

The fourth hypothesis tested for a significant difference between the amount of teacher assertiveness, responsiveness, and versatility using the dependent measure, teacher effectiveness. A priori power calculations for the 2X2X2 way factorial analysis of variance at $1-\beta=.975$ yielded cell sizes of 15 for each cell. Results for the analysis of variance showed nonsignificant F ratios for all except the main effect versatility, ($p\leq .001$; $df=1,500$), and for the two-way interaction between assertiveness and responsiveness ($p < .06$; $df=1,500$). The analysis of variance summary table is shown in Appendix F.

Multiple Classification Analysis (MCA) was calculated to determine the partial correlations for each variable in the fourth hypothesis when the differences in the other factors were being controlled. Each level of assertiveness, responsiveness, and versatility was correlated with teacher effectiveness holding each other variable constant. The standardized partial-regression coefficients R and R^2 were examined. The results of the MCA show

that $R=.308$ which demonstrates the relationship between the criterion variable, teacher effectiveness and the independent variables which were the high and low levels of assertiveness, responsiveness, and versatility of teachers as measured by the Social Style Profile. The MCA table is shown in Appendix G.

SUMMARY

Results of the four hypotheses in this study were presented. The next chapter interprets these results in light of the central purpose of the study.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The central purpose of this study was to determine whether there was a relationship between a person's social style and teacher effectiveness in the classroom context.. Another important purpose of the study was to determine whether a difference existed in teacher effectiveness between those teachers and students with matched social styles and teachers and students who are unmatched in social style.

The first and second hypotheses tested for a significant relationship between social style and teacher effectiveness. The first research hypothesis, which tested the relationship between teachers' social style and teacher effectiveness, was accepted on the basis of significant results. However, the amount of variance that contributed to the explanation of the relationship between the two variables was negligible. The actual value of the r and r^2 indicate there is not a strong relationship between a teacher's social style and teacher effectiveness.

The second research hypothesis, which asserted that a relationship between students' social style and teacher effectiveness exists was accepted on the basis of a significant r . Again, the results should be interpreted with caution because the r^2 showed an extremely small amount of variance accounted for by the two variables. The actual value of r also shows a low correlation between teacher effectiveness and a student's social style. The first and second

hypotheses show that teachers' and students' social styles alone are poor predictors of teacher effectiveness.

The third hypothesis addressed the second important question posed in this study. A student was classified into either the group that consisted of students who possessed similar (homophilous) social styles as their teachers or the group that consisted of students whose social styles differed (heterophilous) from their teachers. Teacher effectiveness scores for the two groups were compared. The third research hypothesis was accepted in light of a significant difference between the two groups. The results show that students who possess similar (homophilous) social styles with their teacher rated their teachers' effectiveness higher than those students whose social styles differed (heterophilous) from their teachers. Three lines of research are supported by these significant results. The first line of research is homophily research (Rogers and Bhowmik, 1970; Rogers and Shoemaker, 1971). Homophily principles state that communication effectiveness is enhanced when the source and receiver are similar on a number of attributes. One of the attributes that can enhance communication effectiveness in the classroom is the degree of similarity between teachers' and students' social style. Further research should be conducted to determine whether communication effectiveness can be enhanced by taking into account one's social style. Research also needs to determine whether moderate heterophily would be better in accounting for one's social style as Alpert and Anderson (1972) found in their research.

The second line of research supported by the significant findings of the third hypothesis is the cognitive style mapping area. Some research in the cognitive style mapping area shows significant differences in students who were matched to their teachers' cognitive styles when compared to students who were not matched (Domino, 1970; Farr, 1971; Elliot, 1976). Further investigation into

this facet of teacher effectiveness would be fruitful, especially when cognitive style mapping is tested with social style matching. Perhaps researchers interested in teacher effectiveness should turn their attention to matching different types of learners with the appropriate types of teachers instead of looking for the most effective type of teachers in all situations. If we follow the designs of cognitive style mapping research, students could be matched with teachers on the basis of their social style instead of randomly assigning students to classes. Oakland Community College in Bloomfield Hills, Michigan, maps students' cognitive styles and then assigns students to the appropriate classes on the basis of the teachers' and students' cognitive styles (Hill, 1977). Students could be assigned to communication classes on the basis of their social styles. Research could be conducted on classes containing people with matched (homophilous) social styles as compared with classes of people with unmatched (heterophilous) social styles.

The third line of research to receive support from these findings is the social style research. V. Lashbrook and W. Lashbrook (1980) successfully matched subordinates and superiors in organizational settings on the basis of social style profile scores. Subordinates seemed to be more satisfied to be working with a superior who possessed the same social style as the subordinate. According to the results of this preliminary study, the matching concept also apparently applies to the classroom context, enhancing the effectiveness of the teacher/student relationship.

Another question posed by this study was whether there was a significant difference in teacher effectiveness scores based on the amount of assertiveness, responsiveness, and versatility of a teacher. Median splits were calculated to classify teachers into categories of high or low assertiveness, responsiveness, and versatility based on previous research (Merrill, 1974; Buchholz et al., 1976;

Knutson and Lashbrook, 1976; Lashbrook, Knutson, Parsley, and Wenburg, 1976). Results of the 2X2X2 factorial analysis of variance did not support the fourth research hypothesis. Nonsignificant F ratios were found for all except the main effect versatility and the interaction effect between assertiveness and responsiveness. The multiple classification analysis also confirmed the lack of variance explained by any of the variables when added together in a partial regression fashion.

The lack of support for the fourth research hypothesis cannot be totally explained, but some conjecture can be offered. One reason why a lack of difference existed between amounts of assertiveness, responsiveness, and versatility may be due to the way these three dimensions are operationalized. The three dimensions are operationalized as dichotomies of high and low scores. Perhaps median splits should not be used to dichotomize the three dimensions and some other way of conceptualizing assertiveness, responsiveness, and versatility, such as quartiles of extremely low assertiveness and responsiveness (Q_1 versus Q_4) should be used.² Perhaps a continuum of each dimension could be constructed instead of dichotomizing the variables. One also has to wonder why medians were never reported in any research using the Social Style Profile. Even in the paper that reported the statistical adequacy of the Social Style Profile (Lashbrook and Lashbrook, 1979) medians were not reported. If medians had been reported, other research on social style would have population medians to compare with their research.

Another question raised in light of the insignificant results concerns the versatility dimension. The question is: Would significant differences in teacher effectiveness occur with versatile teachers? Theoretically, teachers who are versatile can adapt to any situation regardless of their social styles or the students' social styles. This question can and should be tested in future research

to help obtain a clearer picture of these results.

One obvious explanation for the lack of support for the fourth hypothesis is that the three dimensions of social style contribute significantly to the explanation of variance in teacher effectiveness. Before this premise can be accepted, more research needs to be conducted in this area using quartiles instead of medians.

Conclusions

What significance do these results have in light of the body of literature on teacher effectiveness and the central purpose of this study? The central purpose of this study was to investigate the relationship between teachers' and students' social styles and teaching effectiveness. Results of the first and second hypotheses showed a lack of meaningful amount of variance explained by teachers' and students' social styles and teacher effectiveness. We may conclude that the social styles of teachers and students do not contribute to the overall explanation of teacher effectiveness. Because of results obtained in the third hypothesis, this conclusion cannot be accepted.

The third hypothesis tested the most important aspect of this research. The third hypothesis stated there would be a significant difference between students who were similar (homophilous) to their teachers on social style and students who were different (heterophilous) from their teachers on social style dimensions. Results showed not only a significant difference but also showed that students who were homophilous with their teachers on social style perceived their teachers to be more effective in the classroom than students who were heterophilous with their teachers' social style. Two bodies of research are relevant to these results. The first area of research that underlies the notion of matching teachers and students is homophily research. The second research area

which is the theme that is carried throughout this research effort, is the notion that classroom process is an interdependent, interactive process between teachers and students. Any investigations into teaching effectiveness must take this view into account. Failure to accept the view that teachers and students behave interdependently in the classroom is evident by the lack of consistent and meaningful progress in teacher effectiveness research. The significant findings of the third hypothesis can provide researchers with evidence that it is important to consider students' thoughts, actions and feelings as well as teachers' thoughts, actions and feelings in teacher effectiveness research.

The significant results also point to courses of action that should be taken by teacher effectiveness researchers. The first course of action is to no longer judge teacher effectiveness solely on what a teacher says and does. Even though no one believes teachers teach in a vacuum, people must stop carrying on research as though students just sit in their seats sponging up whatever the teacher says. Researchers must investigate the interdependent relationship between teachers and students to gain a more accurate picture of teaching effectiveness.

The second course of action realized by this study is that researchers should use other measures of teacher effectiveness besides student performance, especially in the form of grades. We can no longer judge teacher effectiveness solely on the basis of a teacher effectiveness rating scale either. We must include student characteristics as well. Knutson (1980) found discrepancies between teachers' perceptions of their own social style, particularly versatility, and students' perceptions of their teachers. How students perceive the entire classroom process is just as important as the teacher's point of view. Therefore, teacher effectiveness research should abandon its focus on the teacher. Instead, we should be doing "classroom effectiveness" research aimed at the investigation

of the interdependent relationships between all classroom participants, i.e. student-student and teacher-student relationships.

Communication scholars can offer rich ideas to classroom effectiveness researchers because of the process-oriented view espoused by the communication field. We need to investigate communication effectiveness in the classroom and how the communication relationship between teachers and students enhances classroom effectiveness. Norton's (1977, 1978) work on communicator style and teacher effectiveness is a good beginning to the classroom effectiveness story but leaves out the other half of the participants-the students. We need to know what combinations of teacher communicator style and student communicator style enhance classroom effectiveness. We also need to know if there is a relationship between communicator style and social style constructs. Are they measuring the same thing?

The next line of research could be to create experimental classrooms set up to include completely homophilous students and teachers, completely heterophilous students and teachers and a mixed condition (as we have in most classrooms) of partly homophilous and partly heterophilous students and teachers on social style. Then we could determine which condition(s) enhanced communication effectiveness in the classroom.

To summarize the priorities needed to conduct research in this area: First, research on teaching effectiveness should include student social styles of communicating as well as teacher social styles. Secondly, further research needs to be conducted on heterophilous (different) versus homophilous (similar) teachers and students on social styles. We also need to find ways to measure the effectiveness of the matched versus unmatched teacher-student conditions such as classroom effectiveness instruments and other measures of teacher and student performance in the classroom. These priorities must be carried out with the

underlying notion that teachers and students create an interdependent communication relationship in the classroom environment. Future research in classroom communication must coincide with this notion or else it is not really communication research.

FOOTNOTES

¹None of Lashbrook's research cites medians used in computing the four behavioral styles. Likewise, none of the others' research in social style cites the medians they used when computing social styles.

²An independent measures t-test was calculated between the low assertiveness and responsiveness scores to determine whether or not a significant difference existed between the two groups split by medians. This test addresses the question of whether medians provide enough of a difference between high and low assertive individuals and high and low responsive individuals. The independent measures t-test for low versus high assertive individuals was .86 (n.s., df = 508). Non-significant results were also obtained for low versus high responsive individuals ($t = 1.13$, df = 508). The results of these t-tests show that medians do not provide large enough differences between people who are supposedly highly assertive and responsive and individuals who are low on assertiveness and responsiveness. Future research must carefully determine, for the sample involved, whether medians can delineate significantly between high and low responsiveness and assertiveness before using medians to calculate social styles. The results of these tests also strengthen the case for using quartiles, specifically quartile one versus quartile four to determine individuals' social styles.

Using the data obtained in this research, the researcher was interested in determining whether the differences between quartile one and quartile four for assertiveness and responsiveness scores were significant. An independent measures t-test for assertiveness showed non-significant results, ($t = .68$, df = 253). Non-significant results were also obtained for responsiveness, ($t = .05$, df = 253). Apparently, quartiles were not successful in delineating extremely high responsiveness and assertives. More research needs to be conducted in this area before social style profile research can proceed to classify individuals on the basis of either medians or quartiles. Indeed, perhaps previous research has made too generous assumptions about the social style variables, and requires examination of the assumed levels of data and normality of their distributions.

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April, 1980.

APPENDIX A

University of Oklahoma
INFORMED CONSENT FORM
AGREEMENT TO PARTICIPATE

Title of Project: An investigation of the relationship of teacher effectiveness and teacher and student social styles.

Investigator: Marla G. Scafe, Graduate student, Department of Communication, 325-3111.

I, _____, hereby agree to participate as a volunteer in the above named research project, which has been fully explained to me.

I understand that I am free to refuse to participate in any procedure or to refuse to answer any question at any time without prejudice to me. I further understand that I am free to withdraw from the research project at any time without prejudice to me.

I understand that by agreeing to participate in this research and signing this form I do not waive any of my legal rights.

(Date)

(Subject Signature)

APPENDIX B
SOCIAL STYLE PROFILE

Please respond to the following words as you feel they pertain to you.

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Final dissertation copy will not include this scale because of conditions set forth by the authors of this scale.

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APPENDIX D

Factor Loadings for the 35-item Teacher Effectiveness Instrument

	<u>FACTOR 1</u>	<u>FACTOR 2</u>	<u>FACTOR 3</u>	<u>FACTOR 4</u>	<u>FACTOR 5</u>
V09	.82305	.13226	.08196	.13787	.18348
V10	.84928	.08382	.07688	.10636	.19799
V11	.78744	.13984	.16132	.13334	.13670
V12	.83284	.06109	.18528	.14473	.04863
V13	.62291	.00106	.01795	.16789	.02641
V14	.58037	.00598	.13659	.03957	.23296
V15	.76671	.02157	.01716	.08695	.21376
V16	.79203	.07566	.09456	.08649	.29028
V17	.78896	.02435	.13455	.13933	.17182
V18	.78691	.03649	.14972	.08204	.09387
V19	.64114	.00327	.01137	.08526	.17765
V20	.60502	.13683	.32739	.04573	.03263
V21	.66022	.05500	.53219	.00015	.01667
V22	.61470	.09937	.48291	.04197	.06697
V23	.68196	.19053	.23258	.02780	.05918
V24	.59160	.43003	.02953	.05165	.04068
V25	.59322	.62582	.01318	.00917	.01723
V26	.64753	.52056	.15261	.02838	.02013
V27	.59082	.36241	.15788	.00259	.03155
V28	.74483	.21814	.00338	.01474	.09803
V29	.55013	.02196	.07690	.08897	.02578
V30	.46345	.07071	.05758	.47755	.11390
V31	.61995	.00021	.11012	.38478	.11947
V32	.51924	.04632	.05718	.26740	.10776
V33	.80499	.11089	.00677	.11580	.17536
V34	.74844	.01335	.10284	.06627	.05435
V35	.85448	.00479	.03832	.02850	.22994
V36	.88488	.01365	.09334	.03542	.22492
V37	.53075	.09742	.07165	.04758	.31697
V38	.46743	.03369	.14673	.03390	.01443
V39	.52160	.09083	.07429	.02424	.12883
V40	.80105	.05442	.08837	.03596	.12535
V41	.78855	.12905	.00849	.11127	.00842
V42	.84265	.08024	.00279	.00164	.16817
V43	.47870	.06435	.02212	.31579	.04566

APPENDIX E

Deleted Factor Scale Items and Their Correlations

		<u>r</u>
V14	In this course, many methods are used to involve me in learning. (PRS)*	.58 (Factor 1)
V21	My instructor adjusts to fit individual many kinds of students. (I)**	.66 (Factor 1) and .53 (Factor 3)
V22	My instructor tailors this course to help many kinds of students. (I)	.61 (Factor 1) and .48 (Factor 3)
V24	I am free to express and explain my own views in class. (I)	.59 (Factor 1)
V25	When I have a question or comment I know it will be respected. (I)	.59 (Factor 1) and .62 (Factor 2)
V26	Mutual respect is a concept practiced in this course. (PRS)	.64 (Factor 1) and .52 (Factor 2)
V27	My instructor relates to me as an individual. (PRS)	.59 (Factor 1)
V29	I understand what is expected of me in this course. (I)	.55 (Factor 1)
V30	There is sufficient time in class for questions and discussions. (I)	.48 (Factor 3)
V32	This course provides an opportunity to learn from other students. (PRS)	.52 (Factor 1) .52 (Factor 1)
V37	I have put much effort into this course. (I)	.53 (Factor 1)
V38	I am satisfied with my accomplishments in this course. (PRS)	.47 (Factor 1)
V39	Frequent attendance in this class is essential to good learning. (PRS)	.52 (Factor 1)
V43	These items let me appraise this course and instructor fully and fairly. (I)	.48 (Factor 1)

*PRS is the Purdue Rating Scale

**I is the Idea Form

APPENDIX F

Analysis of Variance Summary Table for Assertiveness, Responsiveness, and Versatility and Teacher Effectiveness

<u>Source of Variation</u>	<u>SS</u>	<u>df</u>	<u>MSS</u>	<u>F</u>	<u>P</u>
Assertiveness (A)	291.454	1	291.454	1.008	.316
Responsiveness (B)	44.062	1	44.062	.152	.696
Versatility (C)	14056.246	1	14056.246	48.593	.001**
AXB Interactions	982.399	1	982.399	3.396	.06
AXC Interactions	8.965	1	8.965	.031	.86
BXC Interactions	292.568	1	292.568	1.011	.315
AXBXC Interactions	553.164	1	553.164	1.912	.167
Residual	144631.562	500	289.263		

** $p \leq .001$

APPENDIX G

Multiple Classification Analysis of Teacher Effectiveness By Assertiveness, Responsiveness, and Versatility.

<u>Variable</u>	<u>Unadjusted Eta</u>	<u>Adjusted Beta</u>
Assertiveness		
High	1.97	1.32
Low	-0.76	-0.51
Responsiveness		
High	-1.06	-0.58
Low	0.32	0.17
Versatility		
High	6.60	6.47
Low	-4.50	-4.41
Multiple R ²	.095	
Multiple R	.308	

APPENDIX H

Descriptive Statistics of the 35-item Teacher Effectiveness Instrument

	<u>Mean</u>	<u>Median</u>	<u>Mode</u>	<u>Variance</u>	<u>Standard Deviation</u>	<u>Standard Error</u>	<u>Skewness</u>	<u>Kurtosis</u>
V01	3.66	3.82	4.0	1.14	1.07	.047	-.78	.24
V02	3.55	3.62	4.0	1.05	1.03	.045	-.34	-.42
V03	2.34	2.20	2.0	.94	.97	.043	.36	-.72
V04	2.46	2.47	3.0	1.36	1.17	.052	.36	-.52
V05	2.04	1.84	2.0	1.21	1.10	.05	1.17	.73
V06	2.14	1.94	2.0	1.23	1.11	.05	.89	.09
V07	2.09	1.89	2.0	1.23	1.11	.05	.98	.21
V08	2.14	1.95	2.0	1.21	1.10	.05	.94	.27
V09	1.81	1.68	2.0	.82	.90	.04	1.23	1.42
V10	2.25	2.10	2.0	1.03	1.02	.05	.64	-.20
V11	2.22	2.06	2.0	1.10	1.05	.05	.79	.08
V12	2.38	2.17	2.0	1.28	1.13	.05	.64	-.36
V13	2.20	2.01	2.0	1.12	1.06	.05	.90	.22
V14	1.93	1.80	2.0	.98	.99	.04	.69	2.29
V15	2.19	2.07	2.0	.97	.98	.04	.69	.07
V16	2.31	2.21	2.0	1.00	1.00	.05	.60	.13
V17	2.59	2.49	2.0	1.09	1.04	.05	.33	-.42
V18	2.54	2.42	2.0	1.15	1.07	.05	.32	-.59
V19	2.35	2.19	2.0	1.11	1.05	.05	.62	-.15
V20	1.80	1.68	2.0	.82	.90	.04	1.45	2.53
V21	1.88	1.75	2.0	.89	.94	.04	1.19	1.35
V22	1.98	1.86	2.0	.92	.96	.04	1.10	1.19
V23	2.18	2.03	2.0	1.12	1.06	.04	.78	.07
V24	2.09	1.98	2.0	.93	.97	.04	1.01	1.07
V25	1.78	1.73	2.0	.65	.81	.04	1.18	1.76
V26	1.98	1.85	2.0	.98	.99	.04	1.22	1.31

APPENDIX H (cont.)

	<u>Mean</u>	<u>Median</u>	<u>Mode</u>	<u>Variance</u>	<u>Standard Deviation</u>	<u>Standard Error</u>	<u>Skewness</u>	<u>Kurtosis</u>
V27	2.25	2.10	2.0	1.09	1.05	.05	.71	-.03
V28	2.32	2.13	2.0	1.14	1.07	.05	.72	-.07
V29	2.12	1.94	2.0	1.15	1.07	.05	1.01	.45
V30	2.13	1.86	1.0	1.46	1.21	.05	.96	-.01
V31	2.14	1.94	2.0	1.23	1.11	.05	.89	.09
V32	2.38	2.17	2.0	1.28	1.13	.05	.64	-.36
V33	1.51	1.52	2.0	.25	.50	.02	-.04	-2.01
V34	1.82	1.89	2.0	.15	.38	.02	-1.69	.85
V35	1.74	1.64	1.0	.63	.79	.04	.896	.77

APPENDIX I

Descriptive Statistics for the Social Style Profile Dimensions

	<u>Mean</u>	<u>Median</u>	<u>Mode</u>	<u>Standard Deviation</u>	<u>Vari- ance</u>	<u>Standard Error</u>	<u>Skewness</u>	<u>Kurtosis</u>
<u>Assertiveness</u>	39.55	40.69	44.0	8.29	68.77	.367	-.598	1.158
<u>Responsiveness</u>	28.33	28.5	29.0	6.47	41.82	.286	3.83	33.457
<u>Versatility</u>	22.43	22.46	24.0	4.77	22.7	.211	5.869	37.119